

IN THE CLAIMS

1. (currently amended) A memory device controller comprising:
 - an updateable register bank adapted to send a first signal to an analog/memory core of the memory device for controlling operation of the analog/memory core, the analog/memory core comprising an array of flash memory cells and supporting analog access circuitry;
 - a bus controller coupled to the register bank, the bus controller adapted to receive a second signal from the register bank and to send a third signal to the register bank for updating the register bank;
 - a select register coupled to the register bank; and
 - a first processor coupled to the bus controller and the select register;wherein the first signal is sent from the register bank to the analog/memory core without passing through the bus controller; and
 - wherein the bus controller is coupled between the array of flash memory cells and a command user interface of the memory device.
2. (original) The memory device controller of claim 1, further comprising an expression checker coupled between the first processor and the bus controller.
3. (original) The memory device controller of claim 1, further comprising a transfer register coupled to the bus controller for receiving the third signal therefrom during a first clock phase, and coupled to the register bank for transmitting the third signal thereto during a second clock phase.
4. (original) The memory device controller of claim 1, further comprising a clock for sending clock signals to at least one of the first processor, the register bank, and the select register.

5. (original) The memory device controller of claim 4, wherein the clock comprises four clock phases.

6. (currently amended) The memory device controller of claim 1, further comprising a controller interface coupled to the first processor and ~~couplable to at least one of a~~ the command user interface ~~of the memory device, the command user interface couplable to~~ and a second processor located externally of the memory device.

7. (original) The memory device controller of claim 6, wherein the controller interface comprises a suspension controller for causing a suspend command received thereat to be sent to the first processor at a pre-selected time of an operating cycle of the memory device controller.

8. (original) The memory device controller of claim 1, wherein the first signal comprises an address of the analog/memory core.

9. (original) The memory device controller of claim 1, wherein the bus controller comprises an arithmetic logic unit adapted to perform at least one arithmetic operation on at least one of the second signal and data received from the first processor.

10. (original) The memory device controller of claim 1, wherein the first processor comprises a storage device that contains one or more algorithms that include instructions for controlling operation of the memory device controller.

11. (currently amended) A memory device controller comprising:

an updateable register bank adapted to send a first signal to an analog/memory core of the memory device for controlling operation of the analog/memory core;

a bus controller coupled to the register bank, the bus controller adapted to receive a second signal from the register bank and send a third signal to the register bank for updating the register bank;

a select register coupled to the register bank;

a first processor coupled to the bus controller and the select register;

an expression checker coupled between the first processor and the bus controller;

a transfer register coupled to the bus controller for receiving the third signal therefrom during a first clock phase, and coupled to the register bank for transmitting the third signal thereto during a second clock phase; and

a controller interface coupled to the first processor ~~and couplable to at least one of, the controller interface further coupled to~~ a command user interface of the memory device ~~so that the bus controller is coupled between an array of memory cells of the analog/memory core and the command user interface;~~

wherein the command user interface is couplable to ~~and~~ a second processor located externally of the memory device.

12. (original) The memory device controller of claim 11, wherein the bus controller comprises an arithmetic logic unit adapted to perform at least one arithmetic operation on at least one of the second signal and data received from the first processor.

13. (original) The memory device controller of claim 11, wherein the controller interface comprises a suspension controller for causing a suspend command received thereat to be sent to the first processor at a pre-selected time of an operating cycle of the first controller.

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14. (currently amended) A memory device comprising
an analog/memory core comprising an array of flash memory cells and supporting analog
access circuitry;
a memory device controller comprising:
an updateable register bank adapted to send a first signal to the analog/memory
core for controlling operation of the analog/memory core;
a bus controller coupled to the register bank, the bus controller adapted to receive
a second signal from the register bank and send a third signal to the
register bank for updating the register bank;
a select register coupled to the register bank; and
a first processor coupled to the bus controller and the select register;
wherein the first signal is sent from the register bank to the analog/memory core
without passing through the bus controller; and
a command user interface coupled to the first controller and couplable to a second
processor located externally of the memory device;
wherein the bus controller is coupled between the array of flash memory cells and the
command user interface.
15. (original) The memory device of claim 14, wherein the memory device controller further
comprises an expression checker coupled between the first processor and the bus
controller.
16. (original) The memory device of claim 14, wherein the bus controller comprises an
arithmetic logic unit adapted to perform at least one arithmetic operation on at least one
of the second signal and data received from the first processor.

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17. (original) The memory device of claim 14, wherein the memory device controller further comprises a suspension controller for causing a suspend command received thereat to be sent to the first processor at a pre-selected time of an operating cycle of the memory device controller.
18. (currently amended) A memory device comprising
an analog/memory core comprising an array of flash memory cells and supporting analog access circuitry;
a memory device controller comprising:
an updateable register bank adapted to send a first signal to the analog/memory core for controlling operation of the analog/memory core;
a bus controller coupled to the register bank, the bus controller adapted to receive a second signal from the register bank and send a third signal to the register bank for updating the register bank;
a select register coupled to the register bank; and
a first processor coupled to the bus controller and the select register;
an expression checker coupled between the first processor and the bus controller;
and
a transfer register coupled to the bus controller for receiving the third signal therefrom during a first clock phase, and coupled to the register bank for transmitting the third signal thereto during a second clock phase; and
a command user interface coupled to the memory device controller and couplable to a second processor located externally of the memory device;
wherein the bus controller is coupled between the array of flash memory cells and the command user interface.

19. (currently amended) A memory system comprising:

a first processor; and

a memory device comprising:

an analog/memory core comprising an array of flash memory cells and supporting
analog access circuitry;

a memory device controller coupled to the first processor, the memory device
controller comprising:

an updateable register bank adapted to send a first signal to the
analog/memory core for controlling operation of the
analog/memory core;

a bus controller coupled to the register bank, the bus controller adapted to
receive a second signal from the register bank and send a third
signal to the register bank for updating the register bank;

a select register coupled to the register bank; and

a second processor coupled to the bus controller and the select register;

wherein the first signal is sent from the register bank to the
analog/memory core without passing through the bus controller;
and

a command user interface coupled to the memory device controller and to the first
processor;

wherein the bus controller is coupled between the array of flash memory cells and the
command user interface.

20. (original) The memory system of claim 19, wherein the memory device controller further
comprises an expression checker coupled between the second processor and the bus
controller.

21. (original) The memory system of claim 19, wherein the bus controller comprises an arithmetic logic unit adapted to perform at least one arithmetic operation on at least one of the second signal and data received from the second processor.
22. (original) The memory system of claim 19, wherein the memory device controller further comprises a suspension controller for causing a suspend command received from the first processor to be sent to the second processor at a pre-selected time of an operating cycle of the memory device controller.
23. (original) The memory system of claim 19, wherein the memory device controller further comprises a transfer register coupled to the bus controller for receiving the third signal therefrom during a first clock phase, and coupled to the register bank for transmitting the third signal thereto during a second clock phase.
24. (currently amended) A method of operating a memory device controller, the method comprising:
receiving first data at a bus controller of the memory device controller from a first register of a register bank of the memory device controller;
sending second data from the bus controller to the first or a second register of the register bank for updating the register bank; and
sending a control signal from a third register of the register bank to an analog/memory core of the memory device for controlling operation of the analog/memory core, the analog/memory core comprising an array of flash memory cells and supporting analog access circuitry;
wherein the control signal is sent from the third register of the register bank to the analog/memory core without passing through the bus controller; and

wherein the bus controller is coupled between the array of flash memory cells and a command user interface of the memory device.

25. (original) The method of claim 24, further comprising processing the first data at the bus controller to produce the second data.
26. (original) The method of claim 25, wherein processing the first data at the bus controller is in response to receiving a signal from a processor of the memory device controller.
27. (original) The method of claim 25, wherein processing the first data at the bus controller comprises processing the first data in combination with third data received at the bus controller from a processor of the memory device controller.
28. (original) The method of claim 24, wherein sending second data from the bus controller to the first or the second register comprises:
sending the second data to a transfer register during a first clock phase;
holding the second data at the transfer register until a second clock phase; and
sending the second data to the first or the second register during the second clock phase.
29. (canceled)
30. (original) The method of claim 24, further comprising receiving an input signal at a third register of the register bank from the analog/memory core, the third signal indicative of operation of the analog/memory core.

REPLY UNDER 37 CFR 1.116 –

EXPEDITED PROCEDURE – TECHNOLOGY CENTER 2100

Serial No. 10/722,110

Title: MEMORY DEVICE CONTROLLER

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31. (original) The method of claim 24, further comprising receiving a control signal at a select register of the memory device controller from a processor of the memory device controller before receiving the first data at the bus controller for selecting the first register.

32-40 (canceled)